

swamp-border, the converse also being true when the conditions are reversed.

There is also some possibility that colonies of *R. maximum* may spread and then contract in a natural way in response to such factors as aging of the individuals that make up a stand or perhaps in response to climatic changes. —

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NEW AND INTERESTING VASCULAR PLANT RECORDS FROM KANSAS

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Intensive field studies in Kansas have resulted in the finding of eight species previously unreported for the State and new collection records for nine of the rarer species. Specimens are on file in the Herbarium, The University of Kansas.

SPECIES NEW TO KANSAS

Hilaria jamesii (Torr.) Benth. This species is not recorded for Kansas in any manual or State list. It may now be listed for southwestern Kansas with data as follows: Common on sandy soil in the Cimarron River valley, 8 miles north of Elkhart, Morton County, July 9, 1958, *McGregor 13981*.

Eleocharis atropurpurea (Retz.) J. & C. Presl. Found in large quantities on the margin of shallow ponds in the sand dunes north of Burrton, Harvey County, June 25, 1959, *McGregor 14531*. The species was associated with strand plants of *Marsilea mucronata* A. Br.

Holosteum umbellatum L. This naturalized species has become somewhat frequent in central and southcentral Kansas. It is now known from Mitchell, Rice, Reno, Kingman, Pratt, and Barber counties where it is found, during April, on sandy soils of lawns, fields, and roadside banks. Specific data on a representative collection is as follows: one mile east of Kingman, Kingman County, sandy field, April 26, 1959, *McGregor 14204*.

Chorispora tenella (Willd.) D C. The first record of this adventive species was a fragmentary specimen sent to me from Rice County in 1947. It has since been found in Chautauqua, Butler, Harvey, Riley and Rice counties. It has been found only in lawns, near feed lots and roadside banks. A representative collection is as follows: roadside bank, ½ mile south of Lyons, Rice County, April 24, 1959, *McGregor 14173*.

Vicia ludoviciana Nutt. Frequent on red gypsum soil prairies, seven miles west of Medicine Lodge, Barber County, May 28, 1957, *McGregor, 12863*. Plants occur as scattered individuals on prairie hillsides and in ravines.

Vicia dasycarpa Ten. This naturalized species is another Kansas record from the small Ozarkian area in the extreme southeastern corner of the state. The data are as follows: rocky hillside, four miles east of Baxter Springs, Cherokee County, June 9, 1957, *E. W. Lathrop 3737*.

Ammoselinum popei T. & G. This species has been reported from Kansas on the basis of a specimen in NY bearing the notation of "southwestern Kansas". It is now known from Kansas as follows: dry gypsum flats, seven miles south of Lake City, Barber County, May 9, 1959, *McGregor 14251*.

Mimulus glabratus H. B. K., var. **oklahomensis** Fassett. On sandy flat of small clear stream at Elm Mills, Barber County, April 24, 1959, *McGregor 14174*. At a similar location just one mile west was collected *Mimulus glabratus* H. B. K., var. *fremontii* (Benth.) Grant. This is the variety of the species found over most of western Kansas.

INFREQUENTLY COLLECTED PLANTS

Danthonia spicata (L.) Beauv. Previously reported only from the extreme southeastern corner of Kansas the species has been found to be common in the Chautauqua Hills area some ninety miles westward. Data is as follows: Open areas in scrub-oak hillsides, sandy soil, five miles east of Toronto, Woodson County, June 5, 1955, *Lathrop 636*.

Gymnopogon ambiguus (Michx.) B. S. P. Included in the Kansas flora on the basis of an old specimen from Chautauqua County with uncertain data. A recent collection is as follows: Ravine, sandstone canyon, three miles northeast of Sedan, Chautauqua County, August 19, 1959, *McGregor 15048*. The species was abundant in local areas.

Panicum perlongum Scribn. Formerly known from three counties in central part of the state the species is now known from east-central Kansas as follows: Common in rocky, big bluestem prairie, two miles northeast of Welda, Anderson County, June 8, 1956, *McGregor 12319*.

Juncus scirpoides Lam. Has been known only from the salt marsh area in Stafford County. The species is rather frequent on salty flats in the Medicine River valley of Barber County. A representative collection is as follows: Salt flat along Medicine River, eight miles south of Medicine Lodge, July 11, 1958, *McGregor 14070*.

Spiranthes gracilis (Bigel.) Beck. This species has been listed for Kansas from Cloud County. The specimen, however, is *S. lucida* (H. H. Eat.) Ames. Recent collections of *S. gracilis* have been made by the author from Bourbon, Chautauqua, Cherokee, Douglas, Franklin, Neosho and Woodson counties.

Salicornia rubra A. Nels. This species has been known in the state on the basis of an old collection made in Stafford County. It has been rediscovered with data as follows: barren salt plain, Great Salt Marsh, Stafford County, September 2, 1959, *McGregor 15193*. A few hundred plants were found in a localized area in the marsh and were associated with *Sesuvium verrucosum* Raf. and *Suaeda depressa* (Pursh) S. Wats.

Sesuvium verrucosum Raf. This species has been included in the

States flora on the basis of an old collection from Ford County. It has been found to be frequent on saline areas in Barber, Rice and Stafford Counties. A representative collection is: Common on saline plain, 1½ miles southeast of Hazelton, Barber County, July 28, 1959, *McGregor 14589*.

Mimosa borealis Gray. Known previously in Kansas only from Meade County it has now been located 85 miles east as follows: Gypsum Hills prairie, rocky hillside, five miles south and two miles east of Lake City, Barber County, June 24, 1959, *McGregor 14479*. Sixty-three of these shrubby plants were counted in the area.

Dalea compacta Spreng. From sand hill prairies, valley of Cimarón River, eight miles north of Elkhart, Morton County, July 9, 1958, *McGregor 13971*. Known previously only from Grant and Stevens counties. Some specimens from the Morton County colony had spikes 25 cm. long as compared with the usual descriptions of up to 15 cm. in length. — DEPT. OF BOTANY, UNIVERSITY OF KANSAS, LAWRENCE.

ELEOCHARIS ACICULARIS IN ACID MINE DRAINAGE

ELWOOD B. EHRLE

During a recent floristic study (Ehrle, 1958) the paucity of aquatic vegetation was noted as a characteristic of the flora of the eastern edge of the Allegheny Plateau in Central Pennsylvania. The waters of this area pass over and through strip mines and naturally exposed coal seams in their course to the streams forming the major pattern in the drainage basin of the West Branch of the Susquehanna River.

Leighton (1904) gave the following general description of streams polluted by acid mine drainage: "The appearance of a small stream into which coal-mine waters are discharged is peculiar. The bottom of the channel is colored a light yellow and there appear no signs of vegetation of any kind. All fish life in the stream is immediately destroyed at the first appearance of coal mine wastes." This description is incomplete only in omitting mention of the abundant mats of *Eleocharis acicularis* (L.) R. & S. in the more shallow portions of many such streams.

The records obtained by Love (1954) from the West Branch of the Susquehanna River, two miles downstream from Lock Haven (Clinton County, Pa.), are instructive in